

**Notice of Allowability**

Application No.

10/647,432

Examiner

Mark Connolly

Applicant(s)

YOKOZEKI ET AL.

Art Unit

2115

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the application having been filed 8/26/03.
2. ☒ The allowed claim(s) is/are 1-18.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 8/26/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 20060227
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
THOMAS LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

## **DETAILED ACTION**

### **REASONS FOR ALLOWANCE**

1. The following is an examiner's statement of reasons for allowance:

Miyagi, US Pat No 6900478 teaches a multi-threshold environment comprising a switch provided between a first and second power supply line [fig. 7A].

Mashiko et al., US Pat No 5781062 teaches a multi-threshold environment comprising a normal power supply line, a virtual power supply line, a switch circuit that connects the power supply lines and a circuit block connected to both the normal and virtual power supply lines [fig. 2].

Yokozeki, JP 2003203475A teaches writing data into a latch circuit in accordance with a polarization of a ferroelectric capacitor [abstract].

Applicants Admitted Prior Art teaches a sleep switch provided between a first and second power supply line and wherein data from a latch is saved in a balloon latch when the system transitions to a sleep mode and wherein data is restored to a non-volatile latch from the balloon latch when the system transitions back to the active mode [fig. 1 and pages 2-3].

The prior art of record does not teach or suggest individually or in combination a latch circuit with a transistor of a second threshold voltage, which is lower than a threshold voltage of a transistor in the sleep switch. Furthermore, the prior art of record does not teach or suggest a control signal generator generating a sleep signal for causing the sleep switch to conduct to thereby activate the latch circuit.

2. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Sam Huang, Reg. No. 48,430 on 3 March 2006.

Please amend the claims 3, 4, 5, 6, 7 and 14, as follows: -

In claim 3:

On line 3 after the word "each" insert – of the –

On line 4 replace "capacitor" with "capacitors"

On line 6 replace "terminal" with "terminals"

On line 9 replace "the" with "a"

In claim 4:

On line 2 replace "two pairs" with "a pair"

On line 3 after the word "each" insert – of the –

On line 4 replace "capacitor" with "capacitors of the ferroelectric capacitor pair"

On line 4 replace "the" with "a"

On line 7 replace "each" with "the pair of"

On line 8 replace "terminal" with "terminals"

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On line 10 after the word “the” insert – ferroelectric capacitors of the –

In claim 5:

On line 2 replace “terminal” with “terminals”

On line 3 replace “capacitor” with “capacitors”

In claim 6:

On line 2 after the words “of said” insert – one of the –

On line 3 replace “capacitor” with “capacitors of the ferroelectric capacitor pair”

In claim 7:

On line 5 after the word “during” insert – said –

In claim 14:

On line 10 replace “circuits” with “circuit”

4. Pursuant to MPEP 606.1, the title has been changed to read:

**-- A MULTI-THRESHOLD-VOLTAGE INTEGRATED CIRCUIT HAVING A  
NON-VOLATILE DATA STORAGE CIRCUIT --**

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Connolly whose telephone number is (571) 272-3666. The examiner can normally be reached on M-F 8AM-5PM (except every first Friday).


If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Thomas C. Lee can be reached on (571) 272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mark Connolly  
Examiner  
Art Unit 2115

mc  
February 27, 2006



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